

ABSTRACT

A system for treating a blood sample (700) having an analyte of interest comprises a strip (200) having a membrane (218), respective portions (216, 220 and 222, or 300) which are provided for receiving the sample, for lysing cells of the sample to liberate hemoglobin, and for capturing glycated hemoglobin. The latter two portions (220 and 222, or 300) of the membrane are treated with lysing and capture agents, respectively. A portion of the strip (214 or 230 or 240) is provided for holding an eluting agent and for releasing the agent upon a release condition. A system for detecting analyte comprises an optical subsystem (550) that is aligned with the strip to provide a signal corresponding to an amount of analyte, and an electronic subsystem (650) for processing the signal (560) to provide a result, such as an amount or percentage of glycated hemoglobin. To use these systems, the user simply applies a small sample (700) to the membrane (218) and closes a door (10) of the detection system over the strip (200) such that the door triggers the release of the eluting agent. No sample pre-treatment is required. The preferably handheld system (100) is a simple and convenient monitoring tool for the user, such as a diabetic patient who must monitor blood glucose on an on-going basis. While the systems are useful in the monitoring of blood glucose, they may be used for treating a sample other than blood and detecting an analyte other than an analyte in blood.